



OPEN SPACE CONSERVANCY TRUST STAFF REPORT

Item 3
October 20, 2022
Regular Business

AGENDA ITEM INFORMATION

TITLE:	Herbicide Use Protocol Amendment	<input type="checkbox"/> Discussion Only <input checked="" type="checkbox"/> Action Needed: <input checked="" type="checkbox"/> Motion <input type="checkbox"/> Ordinance <input type="checkbox"/> Resolution
RECOMMENDED ACTION:	Approve Herbicide Use Protocol amendments	

STAFF:	Lizzy Stone, Natural Resources Project Manager
COUNCIL LIAISON:	Lisa Anderl
EXHIBITS:	1. Herbicide Use Protocol Draft Changes

SUMMARY

In May 2010, the Open Space Conservancy Trust adopted the Herbicide Use Protocol which prescribes the situations in which herbicide may be used in Pioneer Park and Engstrom Open Space. The protocol requires that Trust board members review, approve, or reject any new uses of herbicides on Trust properties. The City’s Natural Resources staff follow an adaptive management framework to ecological restoration, assessing and adopting the methods proven to be most effective and efficient to achieve management goals. To this end, staff propose the following amendments to the protocol:

1. Include use of the chemical triclopyr in addition to, or instead of, glyphosate to treat invasive trees, blackberry stems, and difficult to manage herbaceous weeds.
2. Include use of imazapyr in addition to, or instead of, glyphosate to treat knotweed species.
3. Limit herbicide treatment of English ivy to steep slopes.
4. Allow for cut and treat herbicide use on blackberry stems where blackberry is growing through native plants.
5. Add yellow flag iris and shiny geranium to the list of weedy herbaceous plants that can be treated with herbicide.
6. Include an option to treat regulated noxious weeds when they are found on Trust Property using the least toxic effective approach recommended by King County Noxious Weed Control Program.

Triclopyr versus glyphosate

Triclopyr is a systemic herbicide that is used to control terrestrial and aquatic broadleaf plant species. The chemical comes in different formulations, most commonly the butoxyethyl ester (BEE) and triethylamine salt (TEA) forms. The TEA formulation is approved for use in aquatic habitats and would be the only formulation

used on Trust property. Triclopyr TEA is practically non-toxic to birds, fish, shellfish, and bees. Triclopyr is known to be very effective for brush control and for use on freshly cut stems of woody plants.

With certain plants, triclopyr can provide more effective control than glyphosate alone, in turn allowing for fewer repeat treatments and less herbicide to be used overall. King County Noxious Weed Control Program recommends both triclopyr and glyphosate (among other chemicals) as treatment options for cut English holly stems, but acknowledges that glyphosate is the least effective of the herbicide options¹. When treating certain persistent herbaceous weeds such as yellow archangel, King County's Noxious Weed Control Program recommends mixing glyphosate with triclopyr to reduce the need for repeat treatments². By allowing for the use of triclopyr as an alternative to, or as an additive with, glyphosate, less herbicide can be used overall while still allowing for effective control of weeds.

Imazapyr use on knotweed

Imazapyr is a broad-spectrum, non-selective systemic herbicide that controls terrestrial annual and perennial grasses and broadleaved herbs, woody species, and riparian and emergent aquatic species. It is relatively slow acting and does not readily break down in the plant, making it particularly effective at killing large woody species, as well as other persistent weeds. Imazapyr can be applied as a foliar spray or directly to a cut stump or frill. It was approved for use on invasive trees in the 2016 revision of the Herbicide Use Protocol. Imazapyr has a very low toxicity to mammals and birds, a low toxicity to fish and invertebrates, and is classified as a non-carcinogenic compound by the US EPA. Imazapyr is known to remain soil active for one to five months, particularly when incorrectly over-applied. Overapplication can cause dieback of surrounding vegetation.

King County Noxious Weed Control Program state that imazapyr is the most effective chemical for managing knotweed when plants are too small for hollow stem injection³. Glyphosate is the only product labeled for hollow stem injection. The second most effective chemical for foliar spray is glyphosate. By allowing for the use of imazapyr when treating small knotweed plants, fewer follow up treatments may be required, resulting in less herbicide used overall.

English ivy treatment on steep slopes

The original 2010 Open Space Conservancy Trust Herbicide Use Protocol and the 2016 revision allowed for English ivy to be treated with glyphosate where native plants make up less than 50% of vegetation coverage. In the six years since the last Herbicide Use Protocol revision, comprehensive removal of ground ivy, herbaceous weeds, and all other non-native plants was initiated on 8.8 acres in Pioneer Park. This comprehensive weed removal was conducted by contractors and volunteers. Initial comprehensive weed removal efforts showed that, while it is labor intensive to remove English ivy monocultures manually, the well-drained soils and thick layer of organic matter that is common in Pioneer Park allow for vines and roots to be effectively pulled by hand in most areas of the park.

However, steep slopes covered in ivy create a unique challenge for weed removal, as manual removal of ivy will disturb loose soils and can lead to excessive erosion. In these locations, a foliar spray of dilute, aquatic-approved glyphosate and surfactant will minimize soil loss from erosion and reduce English ivy competition with native plants. By limiting use of herbicide on English ivy to these delicate slopes, we greatly reduce the potential use of herbicide in the park, while still allowing for its use where ecologically necessary.

Cut treat herbicide use on blackberry

Himalayan and evergreen blackberry primarily grow in sunny areas, which in Pioneer Park and Engstrom Open Space are the canopy gaps and forest edges. The Pioneer Park Forest Health Plan describes a long-term

approach of planting trees to minimize canopy gaps that create conditions for these fast-growing weedy species. Where blackberry has already formed a thicket, it can be difficult for new trees to establish before being overgrown and outcompeted. Blackberry thickets are managed by cutting stems and manually digging out the roots. This approach minimizes the use of herbicide but can be labor intensive and result in substantial soil disturbance. Where blackberry is growing immediately next to or through native plants, manual removal is not possible without significant damage to the desirable species. In these cases, cutting the blackberry stem to a height of 6 inches and painting or dabbing aquatic approved glyphosate or triclopyr onto the cut stem will control the blackberry while preserving the native plant. This targeted “cut paint” approach minimizes the impacts of soil disturbance on the surrounding vegetation, while still minimizing the use of herbicide in the landscape.

Yellow flag iris and shiny geranium

Continuous monitoring efforts by the City’s Natural Resources staff and King County Noxious Weed Control Program staff identified small populations of yellow flag iris and shiny geranium on Trust properties. Shiny geranium is a Class B noxious weed in King County, meaning that public and private landowners are required to control plants on their property when found. Yellow flag iris is a Class C noxious weed with control recommended, but not required by the County. Spread of these and any other new noxious weed populations should be monitored closely and managed quickly to prevent spread. Published best management practices recommend treatment with glyphosate + adjuvant to treat yellow flag iris. Shiny geranium is best treated using triclopyr or glyphosate, depending on timing and surrounding vegetation.

Other regulated noxious weeds found on Trust property should be managed using the least toxic, effective method recommended by the King County Noxious Weed Control Board.

¹King County Noxious Weed Control Program. “English Holly- Best Management Practices,” March 2020. <https://your.kingcounty.gov/dnrp/library/water-and-land/weeds/BMPs/English-holly-control.pdf>.

²King County Noxious Weed Control Program, “Yellow Archangel- Best Management Practices,” March 2020, <https://your.kingcounty.gov/dnrp/library/water-and-land/weeds/BMPs/yellow-archangel-control.pdf>.

³King County Noxious Weed Control Program, “Invasive Knotweeds- Best Management Practices,” March 2020, <https://your.kingcounty.gov/dnrp/library/water-and-land/weeds/BMPs/Knotweed-Control.pdf>

RECOMMENDED ACTION

Approve Herbicide Use Protocol amendments